BIO-PSYCHOLOGICAL CORRELATES OF SUICIDAL IDEATION IN CONVICTS AND UNDERTRIALS: AN INTERVENTION STUDY

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Conceptual Framework

We may consider 'Manhunter' or 'Silence of the Lambs' as fiction, yet, such criminal behaviors in reality also has alarmed the authorities and the researchers to reconsider the notion 'nobody is born as a criminal in this world'. There are some aspects that make individuals exhibit criminal behavior and totally change their views of life. Is there any hope for these individuals in life? Yes, as an analysis and understanding helps to at least take care of the life these individuals remain with. So, to begin with understanding the concept of crime, we observe that all individuals and the general public with a purpose of maintaining their security observe some rules and regulations. But, when some individual breaks any rule or regulation that person is labeled as an offender. Crime is an unlawful act or an offence in opposition to the law of land and public, predisposed to legal punishment. "Crime is an act declared harmful to group welfare and which, the state has power to punish (Landis, 1956)".

The two basis of crime are misdemeanors and felony. As per criminal law, a felony is a type of crime either violent or non-violent and classified to be the most severe types of offenses. Violent crimes include violent/aggressive behavior such as injuring, fighting, sexual offense, rape, attempt to murder, adultery, domestic violence, terrorist act, incest, drug cartels, bank robbery, kidnapping, active shooters, plane hijackers, carjackers etc. Such crimes may or may not be committed with weapons and may range from homicide to harassment. On the other hand, nonviolent crimes for instance cover a wide range of offenses like, a forgery (using other people's document) cunning acts, goods trafficking (segregates, alcohols, arson, etc.), growing drugs, plants, abuse forging female, fraud, prostitution and female trafficking, smuggling, stealing/burglary, burning car or property, gambling, bribery. Whatever the criminal act is, it definitely has a cause behind to be explored, for better understanding of the criminal behavior and to derive ways to rehabilitate these people, showing deviant behavior and not connecting to the society in a positive way.

Research evidences exhibits a wide range of variables associated with criminal behavior. Some of the studies demonstrating crime and criminality as an outcome of biological factors incorporate physical size, excitability, swiftness, reactivity of nervous system in the body (Fishbein, 1990). Socio-cultural factors on the other hand, involve the strategies of personal believe and behavior, values, needs and desires that an individual acquires throughout life. These emphasize aspects like social learning, rational choice, self-control, strain, knowledge, skills, attitude and other cultural information learnt through interface with people and groups, as well as from cultural artifact i.e. books, violent movies and video games. All these aspects are finally governed by the cognitive aspects, be it any type of criminal behavior.

Apparently, metacognition i.e. "cognition about cognitions" or "thinking about one's own thinking" relates to the higher order thinking skills. As criminal behavior has a lot to do with one's own thinking, exploring metacognitive thinking of convicts and under trials, will add a new dimension to the study. It originates from the word 'meta', meaning 'beyond', has many forms and takes account of the knowledge about our thinking to be specific. Knowledge regulation of cognitions is important to know about the suicide ideation. There are logical evidences observed during investigations indicating that criminal behavior results from cognitions to a greater extent. An individual with better metacognitive thinking has more control over emotions as self-monitoring and control dimensions of metacognition definitely allow prevention of suicidal ideation besides the control over aggression.

In the social and behavioral sciences, overt and repeated harmful social interface intending to inflict damage or unpleasantness upon other individual/individuals, is aggression. Its occurrence in humans is in retaliation. Aggression may be direct ("physical or verbal behavior intending to cause harm") and indirect aggression ("behavior intended to harm social relations of an individual or a group"), according to De Almeida; Cabral and Narvaes (2015). In opposition to this, instrumental, goal oriented or defensive behavior and assertiveness amid members of the species cannot be regarded as aggression in the identical sense. Yet, aggression will always be a situational variable that impacts the sudden action taken by the suicide attempters.

A range of forms of aggression is expressed physically, show dominance, verbally or non-verbally communicated, defensive that is fear-induced, predatory (goal-oriented), inter-male, wresident-intruder, maternal, species-specific, sex-related, territorial, isolation-induced, irritable and brain-stimulation-induced (hypothalamus). Out of the two subtypes seen in human aggression (1) controlled-instrumental (purposeful or goal-oriented); and (2) reactive-impulsive (often elicits uncontrollable actions that are inappropriate or undesirable), criminal behavior is closely associated with the latter one. Here, an uncontrolled action can also be self-harm in the form of suicide ideations leading to suicide attempts. Although, numerous studies have been conducted as a part of criminal profiling, specifically taking the personality traits and aspects under consideration, personality traits as associated with suicidability. But, exploring metacognitive thinking leading to the prospects of controlling suicidal ideations, at its very occurrence, by lowering the aggression towards self and others inmates of prison, will be contributing in a big way to the field. This will only be possible with an extensive analysis of metacognitive thinking of the convicts and under trials. According to Hans Esysnek theory, personality traits driven by underlying biology, cause crime.

Apparently, the biological basis of behaviour is vital as several aspects contribute to diverse psychological processes and behaviors. To be specific, certain physiological functions like hormonal secretions, affect the behaviour of individuals. For example, the testosterone hormone is significant for affectivity, aggressiveness, sociability and sexuality is known, ever since studies with physiological basis are executed. Hormones produced within the body circulate along with the bloodstream and as a consequence, influence the activity of living cells far from its source of production. Hormones affect social behavior directly by influencing specific aspects of brain function. Mainly researched hormones include testosterone and estrogen as well as vasopressin and oxytocin. Attention given to hormone levels and aggressive or criminal behavior associate with either testosterone or female premenstrual cycle. In a study Booth and Osgood (1993) investigated that low plasma total testorerone (T) level influence the sense of well –being and produce depressive symptoms leading to increase in the risk of suicide.

Oxytocin triggers both physical and psychological effects in women and men. Its influence on behavior and physiology originate in brain, produced by the hypothalamus, and then transfers to the pituitary gland that releases it into the bloodstream. Oxytocin receptors on cells sense its level, which is likely to be higher, for the duration of both stressful and socially bonding experiences, according to the American Psychological Association. Oxytocin acts both as a hormone and as a neurotransmitter. In an article Rashid (2017) quoted oxytocin triggers defensive aggression against outsiders who might threaten someone's social group, such as soldiers who defend their comrades. Oxytocin released in the brain under stress-free condition promotes calming effect. Ellison (2003) states that oxytocin counters the effects of cortisol (stress hormone). It is obvious that in a calm state the person will be relaxed and the ideations relating to suicide will not occur. But incidents also occur when the person seemed to be overtly happy and it is hard to believe that he or she possess such ideations. Apart from this, vitamins also have an important role to play in human behavior. There is much evidence that vitamin D reduces cognitive performance. A study by Bertone-Johnson et.al. (2011) found, an inverse association and that low vitamin D shows positive effect on depression in the postmenopausal women. Some evidence links a shortage of Folic acid that is one of the B vitamins with depression (Ritsner, 2010).

These bio-psychological correlates in some or the other way, connect with suicidal ideation, or suicidal thoughts, concerned with thoughts about strange preoccupation with suicide. The individual's thinking about killing oneself, ranges from a detailed plan and does not include the final act of killing oneself, so it becomes hard to believe that such ideations existed. Suicidal behavior is frequent amongst prisoners, yet, very little is exposed about the factors, so that protection against thoughts regarding ending one's life may be restructured. In fact, time must be taken out to deal with such issues on humane grounds. Pluck and Brooker (2014) state around 25-40% of offenders serving all / part of their sentence have a history of self-harm that is similar to rates among prisoners. They are at an excessively higher risk of such acts or completed suicide, than the general population.

So, the implications are that rates of suicide and other forms of deliberate self-harm should be assessed repeatedly and the relationship between deliberate self-harm acts, suicidal ideation or suicide completion needs to be investigated eventually in studies. There is a need of mental health expertise to deal with these risks. Moreover, Penckofer Kouba, Byrn and Estwing - (2010) found that an increased risk of suicide in areas with less sun exposure, relates to low vitamin D and increased suicidal thought because when individuals spend more time indoors, this reduce the production of vitamin D by sunlight. Some of the prisons being very dark and dingy places, the chances of such problems are prevalent. Finally, according to WHO (2008) jails and prisons are repositories for vulnerable groups that are traditionally among the highest risk for suicide. Considering all this, the thought of such a study is relevant to the conditions at large. Many studies have been done taking the variables under consideration. The summary given below highlights the outcomes and results of these studies. This also allows getting an overview about the gap and the research directions to be followed:

Table-1 Summary and Outcomes of reviewed literature related to Psychological, Biological, and Sociological variables linked to criminal behavior

Authors & Year	**Constructs**	**Outcomes and results**
Nerhus, (2016)	Vitamin D and depression, cognitive impairment	A significant association between low and high level of vitamin D increase negative symptoms of depression and also significantly link to reduced verbal fluency and cognitive impairment.
Mundia, Matzin, Mahalle, Hamid, and Osman (2016).	Intervention , anti-social behavior	Observed that 24-29 and 30-35 years old prisoners (n=64) randomly selected were given intervention (education, Counseling and psychotherapy) in Brunei to successfully treat antisocial, personality, psychopathic and mental health problem.
Kamaluddin, Shariff, Othman, Ismail, and Saat (2015)	Environmental, social and psychological traits, criminal and delinquent behavior	Found in their study that Environmental, Social and Psychological traits are largely linked with criminal and delinquent behavior and found that four psychological traits: personality trait, low self-control, aggressive behavior, cognitive distortion has linkage with criminal behavior.

Shagufta, Boduszek, Dhingra, and Palmer, (2015)	Personal bonding and suicide ideation	Participants in a study were 415 male juvenile offenders in prisons in Pakistan. A structural model using Mplus was specified and tested to inspect the relationships between the three factors of CSI (criminal suicidal identity) and suicidal thoughts, while controlling for age, offender type, period of confinement, and substance dependence. The model offers an adequate fit to the data explaining 22 % of variance in suicidal thought. In group affect the level of personal bonding with other criminals found to exert a strong protective effect against suicide ideation.
DeWall, Gillath, Pressman, Black , Bartz, Moskovitz , and Stetler (2014).	Oxytocin and aggression	Clues from prior research, propose that oxytocin increases prosocial behavior, but this effect is reversed among people with aggressive tendencies or in situations involving defensive aggression. Amid highly aggressive people, an enhancement of oxytocin causes them to make use of aggression toward close others as a means of maintaining their relationship. Oxytocin increased IPV (intimate partner violence) inclinations, but this effect was limited to participants prone to physical aggression. These data offer the first evidence that IPV inclinations have a biological basis in a combination of oxytocin and trait physical aggressiveness.
Cuadra, Jaffe, Thomas and DiLillo, (2014).	Criminal thinking styles and child maltreatment	Criminal thinking styles examined as meditational links amid various forms of child maltreatment (i.e., sexual abuse, physical abuse, and physical neglect) and adult criminal behaviors in 338 men. Analyses revealed positive associations between child sexual abuse and sexual offenses as an adult, and between child physical abuse/neglect and endorsing proactive and reactive criminal thinking styles. Findings suggest likelihood of psychological pathways to criminal behavior related to child maltreatment
Gruadet, Malm, Westrin, an d Brundin, (2014)	Vitamin D, suicidal ideation, ,depression, schizophrenia and psychotic symptoms	A significantly lower vitamin D level increase suicidal ideation. Low levels of vitamin D lead to psychiatric disorders, as cross-sectional studies show an association between vitamin D deficiency and depression, schizophrenia and psychotic symptoms.
Bourke, Boduszek and Hyland(2013)	criminal thinking and personality	Investigated criminal thinking in 179 nonviolent offender moderated by personality in the prediction of recidivism; respondents scoring high on psychoticism and low on neuroticism and extraversion showed a positive association with criminal thinking

Gilbert, Daffern, Talevski, and Ogloff (2013)	Social cognition, maladaptive schema aggression,	Social cognitive theories of aggression- the general aggression model (GAM), highlights the role of knowledge structures in aggressive behavior. The role of three aggression-related knowledge structures—normative beliefs, behavioral scripts, and early maladaptive schema—along with trait anger, when examined with respect to the aggressive behavior. Normative beliefs and scripts associated with aggression. Findings suggest the knowledge structures increase aggression and emphasize the requirement for routine and systematic targeting of aggression-related cognitions in violent offenders.
Konch and Borbora (2013)	Risk factors for crime	The different risk factors responsible for committing crime are family confliction, alcohol addiction, poor economic conditions, unemployment, peer group pressure, neighborhood and media impact. It is found on 400 people18 to 35 years old that all the factors are linked to each other.
Jokinen, Chatzittofis , Hellström , Nordström , Uvnäs-Moberg , and Asberg (2012)	Oxytocin and suicide intent, interpersonal violence	Low CFS oxytocin levels are found in suicide attempters with high suicide intent. Regression analysis indicates suicide intent remained a significant predictor of CSF oxytocin, corrected for age and gender. Lifetime violent behavior showed a trend to be a predictor of CSF oxytocin. Oxytocin levels did not vary significantly in suicide victims compared to survivors. CSF oxytocin is an important modulator of suicide intent and interpersonal violence in suicide attempters.
Heinz, Beck., Meyer-Lindenberg, Sterzer, and Heinz (2011)	Early-life stress, amygdala activity, Prefrontal function, impulsive aggression	Environmental factors, such as early-life stress, interact with genetic variations in serotonin-related genes that affect serotonergic and GABAergic neurotransmission. This increase amygdala activity and impaired prefrontal function that together, predispose to both increased alcohol intake and impulsive aggression.
.Bartz, Zaki, Bolger, and Ochsner (2011)	Oxytocin, prosocial effects	Oxytocin does not yield universally prosocial effects. But, the social effects of oxytocin often depends on contextual and person-level factors, and there is even evidence that oxytocin can produce antisocial effects.
Klinteberg, Almquist, Beijer, and Rydelius (2011)	Substance abuse and criminal behavior	Data from Swedish subjects born in 1953 (n = 14,294) indicates family psychosocial characteristics in childhood associate with children's development into criminal behavior and mortality. Results show all aspects of family psychosocial and individual problems associated with criminality for both genders. A significant impact of alcohol /drug use on the relationship between family psychosocial characteristics and subsequent criminality was obtained among

		females.
Deisenhammer, Ing, Strauss, Kemmler, Hinterhuber et al. (2009)	Suicide ideation and Vitamin D	Development of suicidal ideation can be sudden, as the first thought of suicide often occurs less than 10 minutes before it is attempted. Sometimes in an aggressive population of young people, vitamin D deficiency plays role in depression risk for suicide. Vitamin D deficiency may increase brain informatory play and associate with suicide.
Sircus, Mark (2009)	Vitamin B6, aggression	Low magnesium levels (B6) in blood cause aggressive behavior, depression, mood swings. Magnesium calms the brain and people with severe deficiency in magnesium do not necessarily become hyperactive.
Listwan, Voorhis, and Ritchey (2007)	Personality, drug offenses	During the period of 10 to 12 years, federal prison camp between September 1986 and July 1988.Personality (e.g., neurotics and aggressive) are related to recidivism. Personality (e.g., neurotics) is also significant in the models predicting drug offenses
Guay, Ouimet and Proulx. (2005)	IQ, Sex offenders	Significant difference on mathematical, letter-number, perception subscales as well as on performance IQ and total IQ is found in 150 non sexual and 261 sexual offender
Raine(2002)	Genetic factors, Antisocial behavior	The study provides direct evidence that genetic factors give rise to risk factor for antisocial behavior such as low arousal and if gene environment interaction is found they are important in development of criminality.
Anderson (2000)	Violent stumuli and aggressive thoughts	Violent video game increase aerosol level and promote attitude change, suspicious feeling output variable criminal thinking criminal activity aggressive behavior, aggressive thoughts in children
Klinteberg, Anderson, Magnusson and Stattin, (1993)	Hyperactive behavior and violent offending	Hyperactive behavior in 25-26 years of age for a group of 540 male subjects is significantly related to later violent offending. Results demonstrate relationship between early hyperactive behavior and a later outcome of a combined pattern of alcohol problems and violent criminal offending.
Cohn (1990)	Weather and crime	Researchers investigated the influence of physical environment on criminal behaviour. The situational approach, rational choice theory, and routine activities theory all suggest that weather significantly influence crime rates and criminal behaviour.
Harris and Stadler,1988	Temperature and aggression	The reduction of aggression with increasing temperature does not occur within the normal range of temperatures. And there is no curvilinear effect between temperature and aggression, even during conditions of extreme heat.

Gap Analysis and Future Research Directions

Crime and criminality is not new a phenomenon and have never been. Researchers give evidence that any behavior is the result of nature and nurture to a large extent. Biological theories suggest that criminals are born, but sociological theories give evidence that criminals are made. It is suggested through research that persons who are mentally illness or their family has some criminal environment he or she is prone to be a criminal. Researches point out about social factors. The studies reviewed mention about intervention as important for anti-social behavior; Personal bonding and suicide ideation; Environmental, social and psychological traits, criminal and delinquent behavior; Criminal thinking styles and child maltreatment; Oxytocin and aggression; Vitamin D and suicidal ideation, depression, schizophrenia and psychotic symptoms; Vitamin B6 and aggression as well as cognitive impairment; Social cognition and maladaptive schema, aggression; risk factors for crime.

Studies also relate Oxytocin and suicide intent, interpersonal violence; early-life stress, amygdala activity and prefrontal function; Oxytocin and prosocial effects; Substance abuse and criminal behavior; Suicide ideation and Vitamin D; Personality and drug offenses; IQ with Sex offenders; genetic factors and antisocial behavior; Violent stimuli and aggressive thoughts; Hyperactive behavior and violent offending; Weather and crime as well as Temperature and aggression.

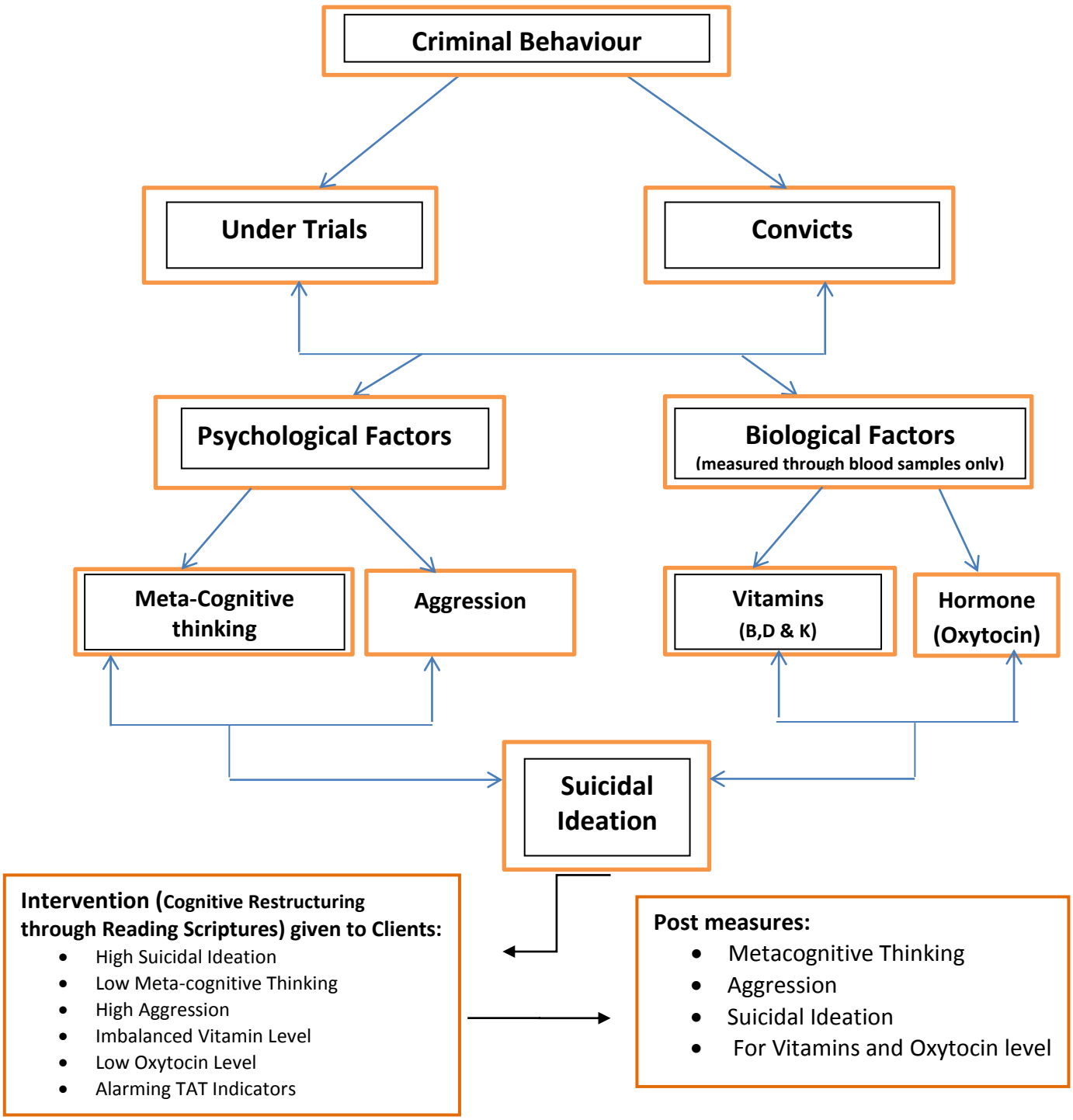
The thoughts emerge that any person who is a criminal as a result of psychological or biological influence, for them punishment is essential, but as an impact their mental status is disturbed. Here, none of the studies mention about metacognitive aspects like self-monitoring and self-control implemented to improve criminal's thought process. Considering the scenario, it seems the under trials will show more aggression in their behavior whereas the convicts more of suicide ideations as they have no hope to escape the punishment. These explorations still

don’t seem to be well trodden. Our purpose here is to analyze these bio-psychological correlates of suicidal ideation in convicts and under trials. Not just this, but also reduce the possibilities of getting suicide ideations by giving them the intervention, mainly to change and restructure their faulty and negative thoughts.

None of the studies seem to use projective technique also, to assess the hidden desires and needs in the convicts as well as under trials. Here, the researcher will also use projective technique for a better understanding of such hidden desires. This will also enable them to find out that the ideations are not associated to their past life outside the jail as such candidates will form a separate group for intervention. The researcher is interested in the occurrence of suicidal ideations after coming to the jail. The study is ambitious but a meticulous execution on the researcher’s end will allow generating valuable psychological and biological data. The influence of oxytocin seems confusing as some researches also mention about the inverse relations with aggression and negative thoughts and some reveal positive relation with antisocial behaviour.

Here, the biological variables are a combination of vitamins and hormone that will definitely form an interesting matrix, further contribution to the existing knowledge. The investigator will be exploring the relationship between these variables related to criminal behaviour and the effect of intervention on cognitions, suicidal ideations and aggression will give an interesting data. The researches in the area that have been conducted are limited and especially very few evidences from the Indian sub-continent are found. So, the conceptual framework formulated is as follows:

Figure 1: Conceptual framework of the current study



METHOD

The study will be conducted in two parts i.e. **Part 'A'** will focus on data collection of a selected sample. In the **Part 'B'** of the study, the intervention will be given and its effectiveness in reducing suicidal ideation and aggression and improving metacognitive thinking of the convicts and under trials will be analyzed with the pre and post measures.

PART 'A'

OBJECTIVES:

1. To study the relationship of metacognitive thinking and aggression with suicidal ideation of the convicts and under trials.
1. To study the contribution of metacognitive thinking and aggression in determining suicidal ideation among convicts and under trials
2. To study the nature of association of high and low levels of Vitamins (B, D and K) with suicidal ideation of convicts and under trials.
3. To study the nature of association of high and low levels of oxytocin with suicidal ideation of convicts and under trials.
4. To study the gender difference in the suicidal ideation of convicts and under trials.

HYPOTHESES:

2. Metacognitive thinking will show a significant negative relationship with suicidal ideation among convicts and under trials.
3. Aggression will show a significant positive relationship with suicidal ideation among convicts and under trials.
4. Both the predictor variables, i.e. metacognitive thinking and aggression will significantly contribute in determining suicidal ideation among convicts and under trials
5. There will be a significant difference between the biological data (vitamins and oxytocin levels) among convicts and under trials.
6. The High and Low levels of Vitamins (B, D and K) and Oxytocin will show a significant association with suicidal ideation.

7. There will be a significant difference in the suicidal ideation of male and female convicts and under trials.

VARIABLES:

Predict variable:

- Meta- cognitive Thinking
- Aggression
- Vitamin (B, D and K)
- Hormone(Oxytocin Level)

Criterion variables

- Suicidal ideation

OPERATIONAL DEFINITION OF THE TERMS USED:

(a) **Meta – cognitive Thinking:** Meta- cognition relates to higher order thinking which involves active control over the cognitive processes engaged in learning .Activities such as planning, how to approach a given learning task, monitoring task comprehension and evaluating progress toward the competition of task are metacognitive.

(b) **Aggression:** overt and repeated harmful social interface intending to inflict damage or unpleasantness upon another individual/individuals

(c) **Suicidal ideation:** suicidal ideation is negative thinking for own life. Suicidal ideation, also known as suicidal thoughts, concerns, thoughts about or an unusual preoccupation with suicide.

(d) **Vitamins:** vitamins are an organic compound and vital nutrient obtained after intake of food to regulate body functions.

(e) **Oxytocin**: is classed as a non peptide (a peptide containing nine amino acids), while its biological classification is as a neuro- peptide. It acts both as hormone and brain neurotransmitter. The release of oxytocin by the pituitary gland is vital for mood control.

SAMPLE:

Inclusive Criteria:

A Stratified random sample of approximately 200 convicts and under trials will be taken from various prisons of Uttar Pradesh. Both male and female prisoners within the age range of 20 -45 years, both married and unmarried will be included in the sample. Their education will be of at least primary level. They may be both from rural and urban areas; may be working or unemployed and belonging to a nuclear or joint family before coming to the jail. They may have committed a crime of any nature (robbery, domestic violence, murder and killing, cheating, illegal drug trade, Arms trafficking, Poaching and wildlife trafficking, Cybercrime, Corruption and police misconduct, Passport theft, Scam incidents, Taxi scam, Rape etc.); will be included in the sample.

Exclusive criteria: convicts and under trials already diagnosed of any severe psychological problems; suffering from severe trauma will be excluded. Hardcore terrorists will also be excluded.

Table- 2: Sample Description:

Age	***Type***	***Male***	***Female***	***Total***
20 -45 years	Convicts	50	50	100
	Under trials	50	50	100
		100	100	**200**

***RESEARCH DESIGN*:** Correlational design will be used for the present study**.**

TOOLS:

(1) Metacognitive Thinking Scale (MTS): developed by Goel and Sandhu (2015) consist of 8 sections, each having 10 items (total 80 items). The split-half reliability of the scale is 0.88 and the content validity is also high. The scale is valid and factorial validity is computed. A total score is obtained by adding the scores of the items in each section. These total scores constitute the raw scores for each of the sections also.

(2) Aggressions Inventory (AI): adapted by Sultania (2006) originally constructed by Buss-Durkee (1957). Aggression is assessed by eight dimensions comprising of eight aspects of aggression (67 items) i.e. assault, indirect aggression, irritability, negativism, resentment,

suspicion, verbal aggression and guilt. The reliability of this inventory is 0.67 while the validity is 0.45. The Higher the score, higher the hostile aggression, is the direction of scoring in this inventory.

(3) Suicidal Ideation Questionnaire by Reynolds (1988): The SIQ consists of 30 items. The respondents rate the SIQ items on a 7-point scale which uses the frequency at which the cognition occurs. Reliability coefficients by grade are uniformly high and ranged from 0.969 to 0.974, with a total sample reliability coefficient of 0.971. Reliability coefficients for each grade by sex were equally high. The item-total scale correlations are quite high for SIQ items, with the majority of coefficients ranging from .70 to .90. The reliability is .72. Validation data for the SIQ are presented primarily in the form of content validity and construct validity ranging from .46 to .86.

(4) Blood Samples: Samples of blood from convicts and under trials for assessing the Vitamins and oxytocin level will collect and analyzed by a trained person from the pathology lab. Permission for the same has already been taken to clear any ethical issues.

***STATISTICAL TOOLS*:** Correlation and Regression analysis will be done to analyze the data and obtain the results.

PART 'B'

OBJECTIVE:

1. To study the effectiveness of psychological intervention (Cognitive Restructuring through Reading Scriptures) in reducing Suicidal Ideation as well as aggression and improving metacognitive thinking of convicts and under trials.
2. To explore the motives related to the need for achievement, power, intimacy, and problem solving through Projective technique (TAT) in convicts and under trials.

HYPOTHESES:

1. The Psychological Intervention strategy will be effective in reducing Suicidal Ideation and aggression and improving metacognitive thinking of convicts and under trials.
2. Data obtained for motives related to the need for achievement, power, intimacy, and problem solving through Projective technique will support the Suicidal ideation,

aggression, metacognitive thinking patterns, decreased oxytocin level in convicts and under trials

VARIABLES:

Independent Variable: Psychological Interventions (Cognitive restructuring through Reading Scriptures)

Dependent Variable:

- Meta- cognitive Thinking
- Aggression
- Suicidal Ideation

SAMPLE: Data generated during the part 'A' of the study on Suicidal Ideation, aggression and metacognitive thinking will be considered to select the sample for Part 'B' of the study. Out of 200 convicts and under trials from Part 'A' of the study, those who are high on Suicidal Ideation, low on Metacognitive Thinking and high on Aggression with imbalanced Vitamins level, low Oxytocin level and have alarming TAT indicators will be purposely selected for the Part 'B' of the study. They will be willing to participate in the intervention programe. Data of Part 'A' will serve as a pre measure of the study.

***RESEARCH DESIGN*:** Pre and Post measure design will be used to study the effectiveness of psychological intervention (cognitive restructuring through Reading Scriptures) in modifying metacognitive thinking of subjects with high suicidal ideation (SI) and aggression. The conditions of the pre and post measure will be maintained the same. The participants will also be recommended to the medical doctor for treatment in case of deficient vitamin level or erratic secretion of oxytocin and a blood sample will be taken to check after a month approximately.

TOOL:

Thematic Apperception Test (TAT): was developed by Murray and Morgan (1930). The TAT as a method reveals subconscious dynamics of an individual's personality. Murray and Morgan focused specifically on motive relate to the need for achievement, power, intimacy and problem

solving**.** This projective technique can specially explore criminal behavior. The full set has 31 TAT cards; the usual number of cards shown to the participants is between 10 and 14, although Murray recommended 20 cards. The test is reliable and valid.

Rationale and Procedure for TAT conduction:

The TAT data will help to explore the hidden motives related to intimacy, problem solving power that will also reveal the past associations, events and experiences in life. This will also add to the sample selection for giving the intervention. In fact some of the scriptures to be read for cognitive restructuring will specifically relate to the experiences of the participants and the wrong thought process they have maintained throughout their life. The TAT will be administered to participants in a quiet room free from interruptions or distractions. They will be made to sit in a the chair with table or a chair next to the examiner. One-hour sessions will be administered separately to the subject. The researcher will show the participants a series of story cards. The participants will be instructed to tell a story about the picture visible on each card, giving specific instructions to include (1) a description of event in pictures, (2) developments that led to the event, (3) thoughts and feelings of people in the picture, (4) and the outcome of the story. Later their responses will be analyzed.

Intervention technique:

Cognitive Restructuring through Reading Scriptures: It is the process of learning to counter cognitive distortions, or fundamental "faulty thinking" with the target of replacing participant's irrational, counter-factual beliefs with more accurate and beneficial ones through reading scripture.

Procedure for cognitive restructuring through Reading Scriptures:

Sessions with participants and the course of treatment will include at least 20 sessions, with each session lasting for 30-60 minutes. The sessions will be given after training and under the guidance of a counselor. During the sessions, the researcher will work with criminals to break down their problems into separate parts, according to their thoughts, physical feelings and actions. This will continue for one month and slowly it will be twice a week after one month. Then follow up sessions will be done.

STATISTICAL TOOLS: Wilcoxon T Test will be used to compare the pre and post intervention scores of metacognitive thinking, aggression and suicidal ideation of the participants.

IMPLICATIONS OF THE STUDY:

Today, Suicide is a serious mental health problem. According to WHO, Nearly 800,000 people die due to suicide every year. Suicide is the tenth leading cause of death. Globally, the highest number of suicide attempter age from 45 to 55 years. Men are especially at risk (like: gambler, alcoholics, mentally ill, poor and stressed), with a suicide rate approximately four times higher than women. Additionally, on an average one prisoner dies every 26 hours.

According to the data from The Times of India (2017), 2062 prisoner died in a period of 74 months from January 2010 to February 2016. Out of them, more than 50% were under trails. On the other hand, Aggression is the father of many of the crimes. Most people commit suicide and crimes like murder, rape, kidnapping, etc. The main reason behind many types of crimes is aggressive behavior.

Through this study, efforts can be made to reduce cases such as crime and suicides in the future. If free directing centers are established through the government in the future to take care of these aspects and restructure the wrong cognitions of the criminals, deaths due to suicide and crimes can be reduced in the society. Guidance for free by Government Hospitals and free lancing from Colleges, will definitely improve the situation. The biological data will also help to give an insight in learning about such tendencies. Therefore, crime rate can be reduced in society and suicide will be prevented. The study has a social cause and a need to show humanity and give assistance for improvement; even to the individuals with criminal tendencies is required for their proper rehabilitation and transformation.

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